



TRANSPORTATION SYMPOSIUM 2019

Gopher Tortoise Relocation

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GOPHER TORTOISE

Gopherus polyphemus

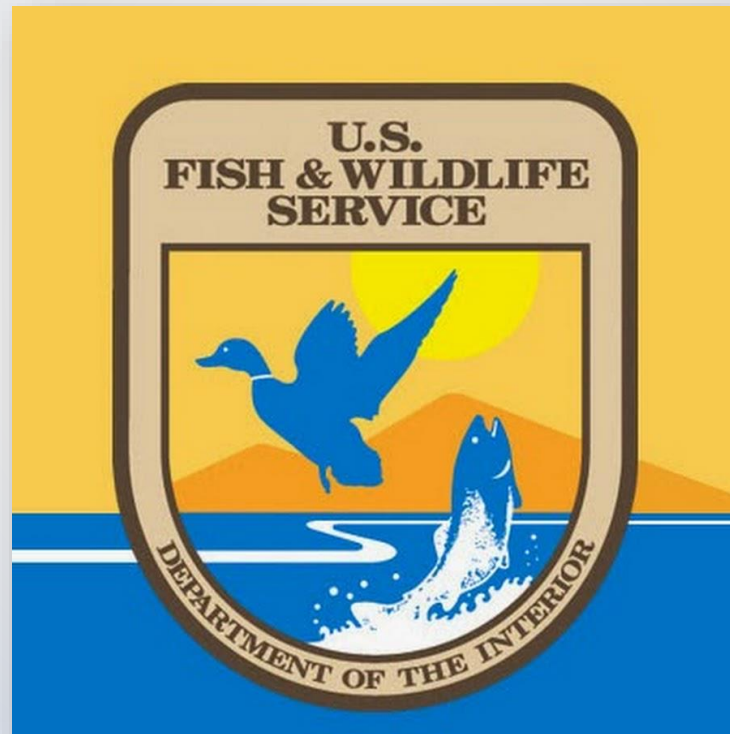


INTRODUCTION

- The gopher tortoise (*Gopherus polyphemus*) is listed in Florida as a Threatened species and is protected under State law, Chapter 68A-27 of the Florida Administrative Code (F.A.C.)
- Candidate for federal listing status
- Threats include loss of habitat, predation, and disease



WHAT DOES “LISTED” MEAN?



THREATENED VS. ENDANGERED

- Threatened = Likely to become endangered
- Endangered = Likely to become extinct



WHAT DOES THIS MEAN TO FDOT?

- Landowners or developers must relocate gopher tortoises out of harm's way on land slated for development
- Harm's way = Within 25 feet of construction, development, or soil disturbance



GOPHER TORTOISE SURVEY

- **Initial:** 15% of the project area
 - Suitable gopher tortoise habitat exists?
 - Gopher tortoises or burrows present within 25 feet of construction?
- **Final:** 100% of the project area
 - Total # of burrows
 - Active, inactive, or abandoned
 - Life stage



PERMITS

- Property owners must obtain relocation permits from the Florida Fish and Wildlife Conservation Commission (FWC) to relocate all gopher tortoises before any land clearing or development activities can take place



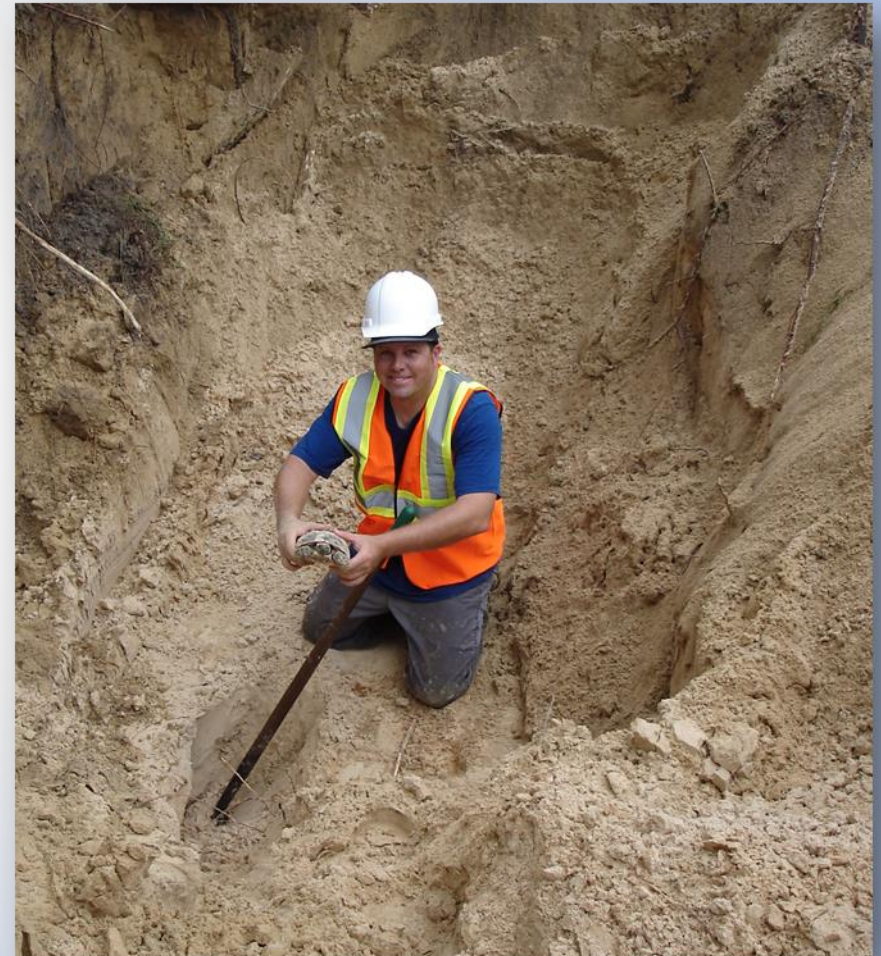
PERMIT OPTIONS

- Landowners with 10 or fewer burrows may opt to relocate tortoises on-site as habitat requirements permit
- Retain a permitted authorized gopher tortoise agent for all off-site relocations



AUTHORIZED GOPHER TORTOISE AGENT

- Surveying, capturing, marking, transporting, relocating tortoises and tortoise commensals
- Agents must accurately represent FWC policies, guidelines, and rules to their clients and to the general public
- To relocate GT's, must be accompanied by a permit for a specific project
- Valid for two years



RECIPIENT SITE PERMITS



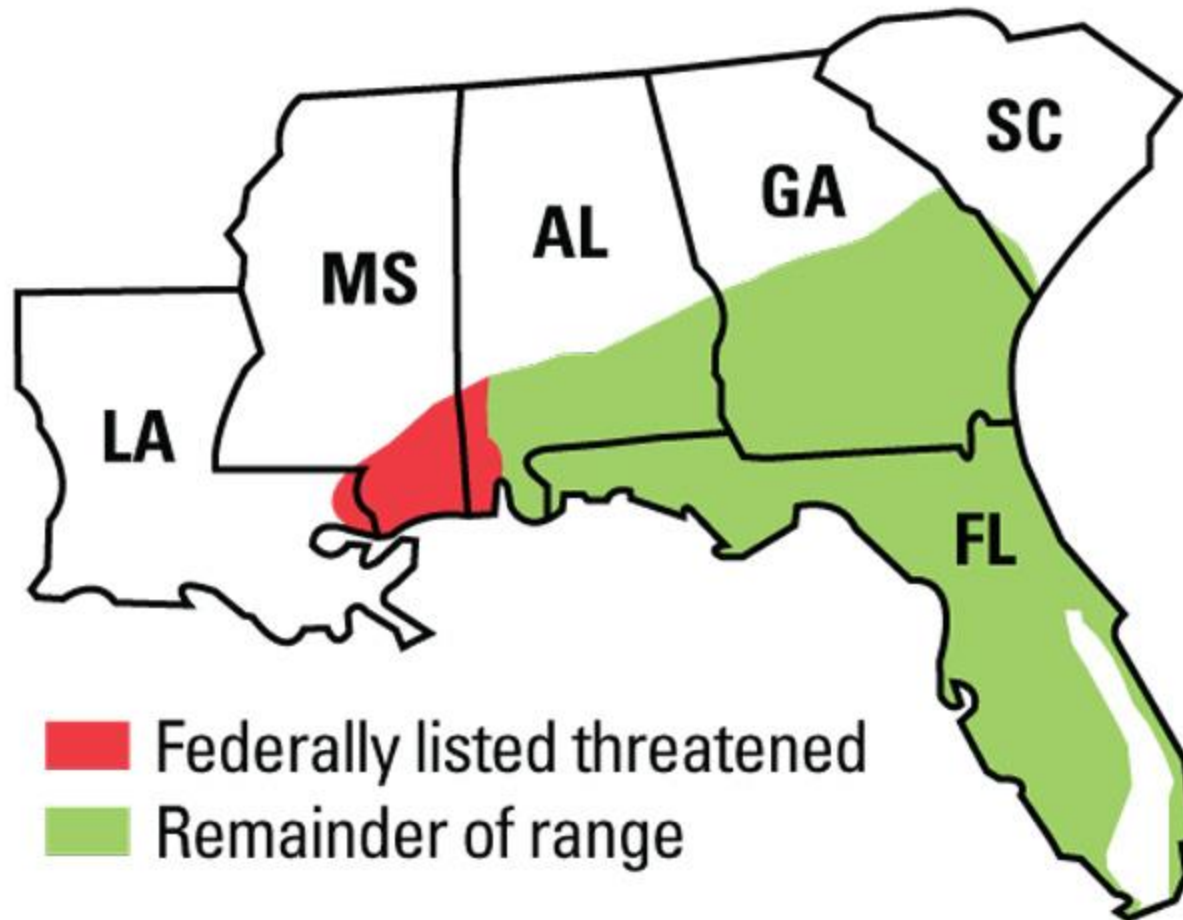
- “To restore and maintain secure, viable populations throughout the species’ current range in Florida.”
- Four levels of conservation:
 - Long-term Protected Recipient Sites
 - Recipient Sites for Restocking Public Conservation Lands
 - Short-term Protected Recipient Sites
 - Unprotected Recipient Sites

BIOLOGY AND ECOLOGY

- Ancient reptiles
- Long lived: 40-60 years in wild
- One of five species in North America
- Only species in southeastern US



Gopher Tortoise Range Map





HABITAT

- Well-drained sandy areas with a sparse tree canopy and abundant low growing vegetation
 - Sandhill, pine flatwoods, scrub, scrubby flatwoods, dry prairies, xeric hammock, pine-mixed hardwoods, and coastal dunes which have historically been maintained by periodic wild fires
- Variety of disturbed habitats including pastures and open areas (often times along roadsides)



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DIET

- Grasses, flowers, fruits and leaves of low growing herbaceous plants and shrubs



WELCOME!

Believe it or not, more than 350 different kinds of animals may share a gopher tortoise's burrow. Most, such as lizards and toads, slip in on occasion for some of the same reasons the tortoise does. Some, such as spiders and snakes, go in to find food. And some, such as the gopher cricket, live nowhere else on Earth!

The gopher tortoise doesn't seem to mind any of these house-guests. They just get out of the way as the tortoise comes and goes. When a gopher tortoise leaves a burrow for good, animals such as foxes or burrowing owls may take it over for raising young.

This **SIX-LINED RACERUNNER** might seek shelter in a tortoise burrow. It might even lay eggs in the warm sand outside the burrow's entrance.



At the bottom of the burrow is a roomy **END CHAMBER**. The tortoise spends most of its time in here.

- | | |
|-----------------------------------|-------------------------------|
| 1 burrowing owl | 8 gopher tortoise |
| 2 northern bobwhite | shell moth |
| 3 wolf spider | 9 gopher tick |
| 4 whip scorpion | 10 mole skink |
| 5 Florida mouse | 11 gopher frog |
| 6 eastern diamondback rattlesnake | 12 gopher cricket |
| 7 little gopher tortoise | 13 gopher tortoise burrow fly |
| scarab beetle | 14 spotted skunk |



As the tortoise digs, it sweeps up rich soil from below—good for sprouting seeds. This soil forms a sandy **APRON** at the front of the burrow.



The **BURROW ENTRANCE** is easy to recognize, with its half-circle shape.

3

4

6

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13

12

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14



The **INDIGO SNAKE** is a threatened species that has already disappeared from much of its range. It often uses a tortoise burrow as its winter den.



Small mammals such as this **EASTERN COTTONTAIL** may scurry into a tortoise's burrow to escape fire or a predator.

THE GOPHER TORTOISE IS A KEYSTONE SPECIES. THAT MEANS MANY OTHER SPECIES DEPEND ON IT FOR THEIR SURVIVAL.



EASTERN INDIGO SNAKE
Drymarchon couperi









THE RELOCATION PROCESS



ACTIVE, INACTIVE, OR ABANDONED?

















OFF TO THE RECIPIENT SITE





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